RELIABILITY ENGINEERING (ENRE)

Graduate Degree Program
College: Engineering

Abstract

Reliability Engineering studies why systems fail, how they fail, when they fail, and how to prevent failure and mitigate consequences. The Reliability Engineering program offers a broad program in graduate studies leading to the degrees of Master of Science (thesis and non-thesis) and Doctor of Philosophy. The academic and research programs are based upon the recognition that the performance of a complex system is affected by engineering inputs that begin at conception and extend throughout its lifetime. Students may specialize in Assessment and Modeling (Quantitative or Probabilistic Risk Analysis, Prognostics and Health Management, Root-Cause Failure Analysis, Reliability Data Collection and Analysis); Testing and Operation (Accelerated Life Testing, Human Reliability Analysis, Physics of Failure, Software Reliability); Quality and Process Improvement (Statistical Process Control, Improved Manufacturing Methods, Reliability Management, Integrity Monitoring); Component and Structure Reliability (Microelectronics, Materials, Electronic Packaging, Mechanical Systems, Energy Systems).

Financial Assistance

Financial assistance is available to highly qualified students in the form of research and teaching assistantships. The most outstanding applicants are offered fellowships. Students seeking financial assistance are asked to submit with their applications a current resume or CV and a statement regarding their qualifications and/or past research or teaching experience. Students receiving external financial assistance are asked to include this information in their statement. All full-time applicants are automatically considered for fellowships and assistantships.

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Website: http://enre.umd.edu **(**https://crr.umd.edu/educational-programs/**)**

Courses: ENRE (https://academiccatalog.umd.edu/graduate/courses/enre/)

ADMISSIONS

General Requirements

- Statement of Purpose
- Transcript(s)
- TOEFL/IELTS/PTE (international graduate students (https://gradschool.umd.edu/admissions/english-language-proficiency-requirements/))

Program-Specific Requirements

- Letters of Recommendation (3)
- Graduate Record Examination (GRE) (optional)
- CV/Resume
- Description of Research/Work Experience (optional)
- Writing Sample (optional)
- GPA of at least 3.0 on a 4.0 scale

Applicants should have a Bachelor of Science degree in engineering, physics, or mathematics and obtained a GPA of at least 3.0 on a 4.0 scale from accredited programs. Admission to the program requires an academic record indicating promise of the high level of accomplishment required for the degree. Applicants with a marginal academic record may be conditionally approved for admission if other evidence of accomplishment is provided (i.e. publications or exceptional letters of recommendation).

APPLICATION DEADLINES

Type of Applicant	Fall Deadline	Spring Deadline	Summer Deadline
Domestic Applicants			
US Citizens and Permanent Residents	May 7, 2027	October 9, 2026	May 14, 2027 (MS Only)
International Applicants			
F (student) or J (exchange visitor) visas; A, E, G, H, I and L visas and immigrants	March 5, 2027	September 18, 2026	N/A

RESOURCES AND LINKS:

Program Website: http://enre.umd.edu
Application Process: gradschool.umd.edu/admissions/application-process/step-step-guide-applying (https://gradschool.umd.edu/admissions/application-process/step-step-guide-applying/)

REQUIREMENTS

- Reliability Engineering, Doctor of Philosophy (Ph.D.) (https://academiccatalog.umd.edu/graduate/programs/reliability-engineering-enre/reliability-engineering-phd/)
- Reliability Engineering, Master of Science (M.S.) (https://academiccatalog.umd.edu/graduate/programs/reliability-engineering-enre/reliability-engineering-ms/)

FACILITIES AND SPECIAL RESOURCES

Reliability engineering faculty, researchers, and students leverage state-of-the-art research equipment, technology, and systems to develop new methods, create innovative tools, and find practical solutions to the most pressing societal concerns. More information about our research labs and centers can be found here: http://enre.umd.edu.